School of Engineering and ICT

Discipline of Information and Communication Technology

Unit Outline

KX0205 Dynamic Web Development

September 2015 - January 2016

Shanghai, China

Unit Coordinator

Soonja Yeom
E-Mail: S.Yeom@utas.edu.au
Phone: (03) 6226 2963
Room: Cent 471, Sandy Bay Campus, Hobart

Teaching Staff

Sandy Bay Campus, Hobart:
Soonja Yeom
E-Mail: S.Yeom@utas.edu.au
Phone: (03) 6226 2963
Room: Cent 471

Toby Peng
UNIT OVERVIEW

Introduction

This unit provides students with the knowledge, understanding and skills required to develop an application system which uses a web interface to a back-end database. The unit assumes a sound basic knowledge of programming and database concepts and skills as developed in the introductory units in these areas. The emphasis in the unit is on mastery of the key concepts and the basic knowledge and skills required to build this kind of application. The unit will provide students with an awareness of the wide range of technologies which are used to support this kind of application, but will examine only a limited number of these technologies to demonstrate the key concepts and their application. The unit explores the purposes and approaches in using scripting and markup languages in relation to the client-server paradigm. The role of both server-side and client-side code are examined. Students will study the use of markup and scripting programming languages to connect to databases via a network.

Students are introduced to some of the most common security issues involved in the development of software, including secure coding practices, secure database access, secure data communications, security of web applications, use of encryption techniques and security testing. Students are provided with a range of practical exercises to reinforce their skills, including authenticating and authorising users programmatically, user input validation, developing secure web and database applications, encrypting and hashing data programmatically, generating digital signatures programmatically, security testing, designing logging and auditing mechanisms.

Prerequisites

None

Unit Weight

12.5% of one academic year

Learning expectations

The University is committed to high standards of professional conduct in all activities, and holds its commitment and responsibilities to its students as being of paramount importance. Likewise, it holds expectations about the responsibilities students have as they pursue their studies within the special environment the University offers. The University’s Code of Conduct for Teaching and Learning states: Students are expected to participate actively and positively in the teaching/learning environment. They must attend classes when and as required, strive to maintain steady progress within the subject or unit framework, comply with workload expectations, and submit required work on time.

Attendance/performance requirements and teaching and learning strategies

Students are expected to attend, and actively participate in, the weekly lectures and tutorials. Students are required to monitor their own learning progress through each week and contact the teaching staff if they require clarification or assistance with the material.

Communication

News and announcements will be posted to MyLO News, and students will be expected to be aware of the content of such posts within 48 hours of them being posted.

Teaching Pattern

Lectures: 2 hr/wk
Tutorials: 1 hr/wk
Self Studies: 1 hr/wk

Unit Content

- History, Concepts, Directions
- Client Side Scripting Languages and Document Object Model
- Server Side Scripting Language
- Privilege configuration for secured environment
- HTTP Protocols, Storage (Files, Database and Dynamic memories)
- Session Management
- Security Issues and Technologies
- Secure coding
- Human Computer Interaction
- Web page Design

For more information see the section titled ‘Content’ on the unit website.
Prior Knowledge and/or Skills

For this unit students are expected to have basic programming knowledge and skills such as those taught in the KXO151 Programming and Problem Solving unit.

Learning Outcomes

On successful completion of this unit, you will be able to: On successful completion of this unit, you will be able to:

Students will develop as ICT professionals with the abilities and skills to:

1. adapt and apply techniques for acquiring, converting, transmitting, storing data, information and knowledge
2. select and effectively apply tools and techniques to develop and manage secured Web ICT product and services
3. explain and adapt appropriate ICT to support decision making to help an organization achieve its objectives using secured Web applications
4. design, implement, and evaluate an ICT interface, system, component, or program to meet desired needs using secured Web development technology

Generic graduate attributes

Successful completion of this unit supports your development of course learning outcomes, which describe what a graduate of a course knows, understands and is able to do. The course learning outcomes for all the ICT degrees can be found via: http://www.utas.edu.au/ict/new-courses. Course learning outcomes are developed with reference to national discipline standards, Australian Qualifications Framework (AQF), any professional accreditation requirements and the University of Tasmania’s Graduate Quality Statement.

The University of Tasmania experience unlocks the potential of individuals. Our graduates are equipped and inspired to shape and respond to the opportunities and challenges of the future as accomplished communicators, highly regarded professionals and culturally competent citizens in local, national, and global society. University of Tasmania graduates acquire subject and multidisciplinary knowledge and skills and develop creative and critical literacies and skills of inquiry. Our graduates recognise and critically evaluate issues of social responsibility, ethical conduct and sustainability. Through respect for diversity and by working in individual and collaborative ways, our graduates reflect the values of the University of Tasmania.

Knowledge

- use a wide range of academic skills (research, analysis, synthesis etc) to problem-solve an ICT-related issue;
- understand the limitation of, and have the capacity to evaluate, their current knowledge;
- develop a broad knowledge base and respect the contribution of other disciplines or professional areas relating to ICT;
- identify, evaluate and implement personal learning strategies;
- learn both independently and cooperatively;
- learn new skills and apply learning to new and unexpected situations; and
- recognise opportunities.

Communication Skills

- demonstrate oral, written, numerical and graphic communication;
- select the medium and form of communication appropriate for a given situation;
- present well-reasoned arguments, using technology as appropriate;
- access, organise and present information, particularly through technology-based activity; and
- listen to and evaluate the views of others.

Problem-solving Skills

- identify critical issues in the discipline or professional area;
- conceptualise problems and formulate a range of solutions;
- work effectively with others; and
- find, acquire, evaluate, manage and use relevant information in a range of media.

Global Perspective

- demonstrate an awareness of the local and global context of the ICT discipline or professional area; and
- function in a multicultural or global context

Social Responsibility

- acknowledge the social and ethical implications of their actions;
- appreciate the impact of social change;
- be committed to access and equity principles in the ICT discipline or professional area, and society in general; and
- demonstrate responsibility to the local community, and society generally.
Alterations to the unit as a result of student feedback

In line with student feedback this unit has been re-developed to provide students with the knowledge, understanding and skills required to develop dynamic web sites which use back-end databases. The unit now also covers user authentication and authorisation, user input validation, and web and database security.
UNIT ASSESSMENT

Assessment Pattern

Internal (60), Exam (40%)

Assessment Summary

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Assessment</td>
<td>15%</td>
<td>Fridays, as listed - 9:00pm (Shanghai-time)</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>15%</td>
<td>Thursday 5th Nov - 9:00pm (Shanghai-time)</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>30%</td>
<td>Thursday 17th Dec - 9:00pm (Shanghai-time)</td>
</tr>
<tr>
<td>External Exam</td>
<td>40%</td>
<td>The final exam is conducted by the University of Tasmania's Student Centre in the formal examination period. AIEN's Teaching and Learning Administration Office will provide you with the specific date, time and location of your exam.</td>
</tr>
</tbody>
</table>

Assessment Items

Item 1  
**Title:** Tutorial Assessment  
**Type:** In-Semester - learning tasks  
**Task Length:** not applicable  
**Weighting:** 15%  
**Links to Learning Outcomes:** 1, 2, 3  
**Due:** Fridays, as listed - 9:00pm (Shanghai-time)  
**How To submit:** Via the appropriate MyLO Dropbox - Please see the Tutorial specifications sheet for the due dates  
**Description:** Students will be asked to complete the tutorial tasks before the tutorial time.

Item 2  
**Title:** Assignment 1  
**Type:** In-Semester - individual assignment  
**Task Length:** not applicable  
**Weighting:** 15%  
**Links to Learning Outcomes:** 1, 2, 3  
**Due:** Thursday 5th Nov - 9:00pm (Shanghai-time)  
**How To submit:** Assignment files are to be submitted electronically via the 'Assignment 1' Dropbox folder on the KXO205 unit's MyLO website.  
**Description:** A single web site construction will be divided into two phases, assignment 1 is phase 1.

Item 3  
**Title:** Assignment 2  
**Type:** In-Semester - individual assignment  
**Task Length:** not applicable  
**Weighting:** 30%  
**Links to Learning Outcomes:** 1, 2, 3  
**Due:** Thursday 17th Dec - 9:00pm (Shanghai-time)  
**How To submit:** Assignment files are to be submitted electronically via the 'Assignment 2' Dropbox folder on the KXO205 unit's MyLO website.  
**Description:** A single web site construction will be divided into two phases, assignment 2 is phase 2.

Item 4  
**Title:** External Exam  
**Type:** Formal Examination  
**Task Length:** 2 hour  
**Weighting:** 40%  
**Links to Learning Outcomes:** 1, 2, 3  
**Due:** The final exam is conducted by the University of Tasmania's Student Centre in the formal examination period. AIEN's Teaching and Learning Administration Office will provide you with the specific date, time and location of your exam.  
**Description:** Allowed Materials: Two A4 sides (one sheet of A4 paper with writing on both sides or two sheets of A4 paper with writing on one side of each sheet) of handwritten or typed notes, no restriction on size or number of lines. Sheet(s) to be handed in with answer booklet.

See the 'Assessment' section in unit website for more detailed information about assessment items.

How your Final Grade will be determined

Overall assessment will be based on the student's performance throughout the semester as well as in a formal examination. In order to achieve a pass (or better) result, a student must obtain:

1. at least 45% of the total mark for in-semester assessment items  
2. at least 45% of the mark for the formal examination
3. at least 50% of the overall mark

**Attendance Requirements**

It is a requirement of your Chinese university that you attend all classes. UTAS supports this principle. It is our belief that attendance in class leads to better engagement with the subject matter and therefore to better results. Please attend all classes.
UNIT RESOURCES

Unit Web Site

This unit is Web Supplemented. This means that the use of the Web is optional for this unit. The unit website contains unit information and resources. The unit website is accessed from http://www.utas.edu.au/coursesonline/. You will need to use your University of Tasmania email pop account username and password to log on to the MyLO system. Once authenticated by the system your personalised MyLO Learning Online area will be displayed. It contains links to the websites that you have permission to access - including the website for this unit. If you are not able to access the unit website, please contact the technical staff at SOU.

Prescribed Text

None

Readings

Refer to lecture materials

There are weekly self study activities that should be completed prior to attending tutorials.

Software

The software that you will need to access the unit website and to study this unit, including general purpose software such as word processors, is provided on the computers in the computing labs. If you intend to use software on other computers please check that the versions are compatible. Fraise (Text editor), Macromedia Dreamweaver, or any other editor
GENERAL RESOURCES

School Website

Discipline of ICT, School of Engineering and ICT - Faculty of Science, Engineering, and Technology.
http://www.utas.edu.au/ict

Faculty Website

Information and Resources for Faculty of Science, Engineering and Technology students are available on the faculty website at: http://www.utas.edu.au/scieng

University Website

Information and Resources for 'Current Students' are available on the university website at:
http://www.utas.edu.au/students/
GENERAL ASSESSMENT

Approach to Learning

The University is committed to high standards of professional conduct in all activities, and holds its commitment and responsibilities to its students as being of paramount importance. Likewise, it holds expectations about the responsibilities students have as they pursue their studies within the special environment the University offers.

The University’s Code of Conduct for Teaching and Learning states:

Students are expected to participate actively and positively in the teaching/learning environment. They must attend classes when and as required, strive to maintain steady progress within the subject or unit framework, comply with workload expectations, and submit required work on time.

You are expected to spend about 130 hrs studying in this unit - this includes attendance at scheduled teaching sessions. (For a 13 week semester this is, on average, 10 hr/wk.) This is the amount of study time that the 'typical' student will need to reach the level of competence and understanding required to fulfil the unit objectives. You are expected to:

- attend all scheduled teaching sessions, unless otherwise notified by the unit coordinator
- prepare for, and actively participate in all scheduled teaching sessions
- complete the assigned learning tasks
- review what has been learnt
- complete assessment items and submit them on time
- access and be familiar with the information and resources available on the unit website
- seek help from teaching staff if you have any questions or difficulties in studying this unit

You are encouraged to read the university’s Code of Conduct for Teaching and Learning. Part A describes the 'Responsibility of the University to Students' and part B describes the 'Responsibilities of Students to the University'.


It is expected that students will familiarise themselves with access and use of the MyLO system operated by the University for the electronic delivery of course materials, and for various forms of communication.

It is expected that students will consult email sent to their University email address at least twice a week for notices relating to the administration of the unit, and for notification of the results of assignments.

It is expected that students will read the background material specified in the course curriculum, will actively attend and participate in tutorials, and be prepared to discuss relevant issues arising with tutors, lecturers and fellow students.

Student Expectations of the Unit

Students enrolled in this Unit may reasonably expect the following:

1. To be able to contact a lecturer or tutor by electronic mail, to raise issues arising in the unit, either relating to content or student performance within the unit.
2. Subject to availability, to be able to discuss such issues in person with the lecturer or tutor.
3. That assignments will be marked and the marks will normally be returned within 3 weeks of due dates.
4. That all relevant notices regarding the administration of the unit, including any necessary changes, will be communicated to all students enrolled in the unit via email.

These expectations are in addition to those specified in relevant University regulations.
Plagiarism

In your written work you will need to support your ideas by referring to scholarly literature, works of art and/or inventions. It is important that you understand how to correctly refer to the work of others, and how to maintain academic integrity. Failure to appropriately acknowledge the ideas of others constitutes academic dishonesty (plagiarism), a matter considered by the University of Tasmania as a serious offence.

Unless specifically stated in the specification of the assessment item provided on the unit website, it is required that:

- work submitted by a student is the work of that student alone OR
- where the assessment item is to be completed by a group of students, the work submitted by the group of students is the work of that group of students alone.

While students are encouraged to discuss the assignments in this unit and to engage in active learning from each other, it is important that they are also aware of the University's policy on plagiarism. Plagiarism is taking and using someone else's thoughts, writings or inventions and representing them as your own; for example, downloading an essay wholly or in part from the internet, copying another student's work or using an author's words or ideas without citing the source.

"Plagiarism is a form of cheating. It is taking and using someone else's thoughts, writings or inventions and representing them as your own; for example, using an author's words without putting them in quotation marks and citing the source, using an author's ideas without proper acknowledgment and citation, copying another student's work.

If you have any doubts about how to refer to the work of others in your assignments, please consult your lecturer or tutor for relevant referencing guidelines. You may also find the Academic Honesty site on MyLO of some assistance.

The intentional copying of someone else's work as one's own is a serious offence punishable by penalties that may range from a fine or deduction/cancellation of marks and, in the most serious of cases, to exclusion from a unit, a course or the University. Details of penalties that can be imposed are available in the Ordinance of Student Discipline - Part 3 Academic Misconduct, see [link].

The University and any persons authorised by the University may submit your assessable works to a plagiarism checking service, to obtain a report on possible instances of plagiarism. Assessable works may also be included in a reference database. It is a condition of this arrangement that the original author's permission is required before a work within the database can be viewed."

It is important that you understand this statement on plagiarism. Should you require clarification please see your unit coordinator or lecturer. Useful resources on academic integrity, including what it is and how to maintain it, are also available at: [link].

Academic misconduct

Academic misconduct includes cheating, plagiarism, allowing another student to copy work for an assignment or an examination, and any other conduct by which a student:

a. seeks to gain, for themselves or for any other person, any academic advantage or advancement to which they or that other person are not entitled; or

b. improperly disadvantages any other student.

Students engaging in any form of academic misconduct may be dealt with under the Ordinance of Student Discipline, and this can include imposition of penalties that range from a deduction/cancellation of marks to exclusion from a unit or the University. Details of penalties that can be imposed are available in Ordinance 9: Student Discipline [link] - Part 3 Academic Misconduct.

Referencing

The preferred text referencing systems for the School is the Harvard system (also referred to as the author-date system). In your written work you will need to support your ideas by referring to scholarly literature, works of art and/or inventions. The University library provides information on presentation of assignments, including referencing...
styles and should be referred to when completing tasks in this unit. For information on presentation of assignments, including referencing styles: http://utas.libguides.com/referencing

It is important that you understand how to correctly refer to the work of others and maintain academic integrity. Failure to appropriately acknowledge the ideas of others constitutes academic dishonesty (plagiarism), a matter considered by the University of Tasmania as a serious offence. The university document on plagiarism contains information about referencing the work or ideas of others (see http://www.utas.edu.au/plagiarism/).
Submissions

The details of the submission method (paper, electronic or other) for each assignment will be supplied in a separate assignment specification sheet. All in-semester assignment submissions (including electronic submissions) are to include an Assignment Cover Sheet which includes a statement confirming that the submission is your own work. If this undertaking is not signed, the assignment will not be marked. The Assignment Cover Sheet is available on the Discipline's web site http://www.utas.edu.au/ict/resources.

Extensions

Assessment items will not be accepted after the due date except under the conditions stated in the Discipline policy on late assessment. http://www.utas.edu.au/__data/assets/pdf_file/0003/231960/ExtensionPolicy.pdf (PDF - 100KB).

Review of Assessment and Appeals

1. It is expected that students will adhere to the following policy for review of any piece of continuous assessment.
   a. Within 5 days of the release of the assessment result, the student should request an appointment with the Lecturer. The student should be prepared to discuss specifically which section of the marking criteria they are disputing and why they consider the mark is inappropriate.
   b. Following this discussion, students may request a formal remark of the original submission (in accordance with Rule of Academic Assessment 111, clause 22.1). This remark will be undertaken, where practicable, by an alternative assessor.
2. Students may also request a review of the final result in a unit. The request and payment must be made within 10 days from the date of the result notification. Students are referred to Rule of Academic Assessment 111, clause 23 at http://www.utas.edu.au/university-council/university-governance/rules and http://www.studentcentre.utas.edu.au/examinations_and_results/results/result_review_results.htm.

Complaints Procedure

It is expected that students will adhere to the following policy for making any complaint or grievance directly related to a Unit:
   a. In the first instance, students are to approach the Lecturer or Unit Coordinator concerned and arrange a time to speak with them about their concern.
   b. If an issue remains unresolved, the student should approach the Head of School and arrange a time to speak with them about their concern.

If the School's internal policy of complaints is unable to resolve an issue, students should consult Ordinance 8 Student Complaints for further direction, see http://acserv.admin.utas.edu.au/complaints_info.html

Formal Examination

The formal examination will be held at SOU, Shanghai, and is conducted by the University Registrar.

Final Grade

Passing grades will be awarded based on the AVCC guidelines:
- PP at least 50% of the overall mark but less than 60%
- CR at least 60% of the overall mark but less than 70%
- DN at least 70% of the overall mark but less than 80%
- HD at least 80% of the overall mark

In order to comply with the benchmarks set by the Faculty of Science, Engineering & Technology for distribution of grades in units, both the in-semester and examination marks that students obtain may be adjusted either upwards or downwards. See http://fcms.its.utas.edu.au/scieng/scieng/policies.asp for details of the Faculty Assessment Guidelines.

Further information and assistance

If you are experiencing difficulties with your studies or assignments, have personal or life-planning issues, disability or illness which may affect your course of study, you are advised to raise these with the unit coordinator in the first instance.

There is a range of University-wide support services available to you including Student Learning Support (http://www.utas.edu.au/student-learning/) and more which can be found on the Student Support and Development page (http://www.utas.edu.au/students/support-development) of the University website.

Should you require assistance in accessing the Library, visit their website (http://www.utas.edu.au/library/study) for
more information.